

**MIXED-SIGNAL SINGLE-CHIP INTEGRATED SYSTEM ELECTRONICS
FOR DATA STORAGE DEVICES**

ABSTRACT OF THE DISCLOSURE

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5 rendered using a single integrated circuit technology type (e.g.,
digital CMOS) for all components. Analog and digital circuits are
combined in such a way as to eliminate or reduce noise or
interference in digital circuits from analog circuit components.
Individual elements may have their outputs and inputs MUXed
10 together such that individual elements can be selectively switched
(during testing modes) such that the integrated circuit emulates or
behaves in the same or similar manner as one of the prior art
components. The present invention may be applied to magnetic hard
disk drives (HDDs) or other types of storage devices such as floppy
15 disk controllers, optical disk drives (e.g., CD-ROMs and the like),
tape drives, and other data storage devices.